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**Microevolution Short Response Questions**

Mrs. Krouse, AP Biology, 2015-2016

**Directions:** For this assignment, you will complete three short response questions. For two questions, you will be provided with a rubric so you can check your answers and familiarize yourself with how the College Board scores short response questions. For the other question, you will have the opportunity to revise your response after familiarizing yourself with the College Board rubric. Then, you will turn this question in to be graded.

**Overall Tips for Completing Short Response Questions:**

-On the AP test, your short responses should take about 6 minutes to answer and be about 4-6 sentences in length. We are going to work up to this pace, however, so do not worry if these practice questions take you longer!  
-Read the question through twice. Underline and pay close attention to the command terms (see below) used in the directions (ex: describe, explain, compare, give evidence for, graph, etc.).

-Be sure that you answer all parts of the question. If you are given a choice of two topics within a question, choose carefully and do not answer both.

-When writing your response, label the parts of the response with “a’s, b’s, c’s, etc.”, as they are labeled in the question. Do not skip around within the question!

-Do not include broad introductory statements or conclusions. Just get to the point, and answer the question.

-Answer the question thoroughly. No detail is too small if it is relevant. Examples are always appropriate. Be sure to include the obvious… most points are earned for the basics!

-Define your terms. Say something about each of the terms you use. If you can’t recall a specific term, take a stab at it or simply describe the concept.

**Command Terms for This Set of Questions and Their Meanings:**

-Identify: State or name a known biological fact, concept, or term

-Justify: Support a statement with sufficient evidence

-Predict: Tell what you expect to happen

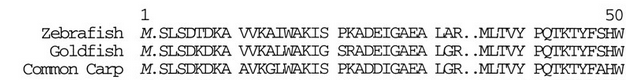
-Present or provide: Give support, reasoning, and/or evidence to back up a particular claim

-Describe: Use details to provide an accurate account of a situation

-Make a claim: State a fact or assertion

-Explain: provide details and reasoning in order to clarify something

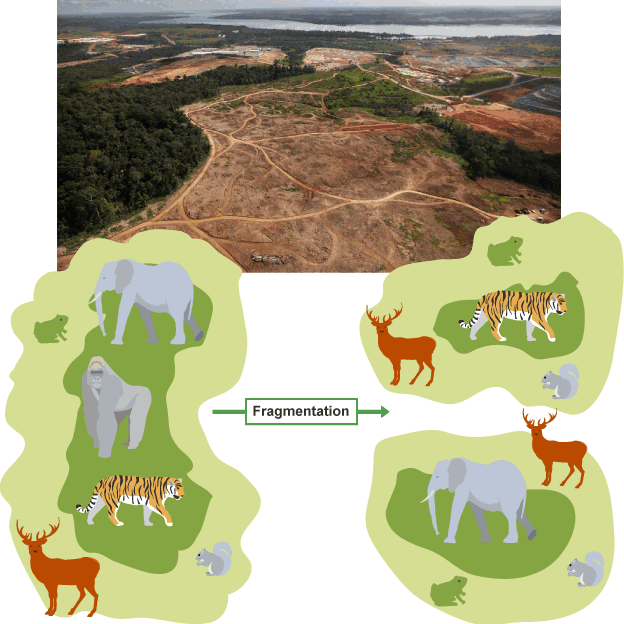
**Question #1:**



The image above shows a protein sequence found in three species of fish—zebrafish, goldfish, and common carp. Each letter in the sequence represents one of the 20 different types of amino acids, which are the building blocks of protein molecules.

1. Identify the species of fish (goldfish or common carp) that is most closely related to the zebrafish.
2. Justify your choice based on evidence from the image.

**Question #2:**

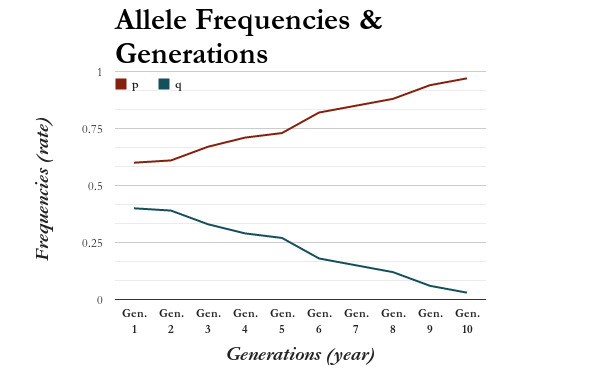


The image to the right shows a forest habitat that has been disrupted by habitat fragmentation. Habitat fragmentation occurs when a process (usually related to human activities) destroys a portion of a populations’ habitat and results in the population being separated into two or more smaller groups.

1. Using the cartoon image to the right, predict which population of squirrels—the larger population on the left or the two smaller populations on the right—is more likely to go extinct.
2. Provide reasoning to support your prediction.
3. Suppose a corridor/pathway is built that allows movement of squirrels between the two fragmented populations. Predict how this will affect the amount of genetic diversity in the gene pools of these fragmented populations, and provide reasoning to support your prediction.

**Question #3:**

The graph to the right shows the change in allele frequencies for a dominant allele (frequency represented by p) and a recessive allele (frequency represented by q) over 10 generations. The trait represented on the graph is leg length in rabbits. Long legs is caused by a dominant allele, and short legs is caused by a recessive allele.



1. Describe how the frequencies of the dominant and recessive alleles are changing over time.
2. Identify one environmental factor that could result in the changes seen in the frequencies of the dominant and recessive alleles for this population of rabbits. Explain how this environmental factor could result in these changes.
3. Make a claim as to whether or not the population is in Hardy Weinberg equilibrium. Justify your claim using evidence from the graph.

**Answers to the Short Response Questions:**

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| **Answer for Question #1:** |
| **Answer for Question #2:** |
| **Answer for Question #3:** |